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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/638,907	08/15/2000	Thomas M. Olano	15-4-897.00	1122

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EXAMINER

NGUYEN, HAU H

ART UNIT PAPER NUMBER

2676

DATE MAILED: 08/28/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/638,907

Applicant(s)

OLANO ET AL.

Examiner

Hau H Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-9, 11-19, 21-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Rich (U.S. Patent No. 5,923,338).

Referring to claims 1-4, 9, 11-14, 19, 21-23, as seen in FIG. 2, Rich teaches an image generation system 20 includes a plurality of processing elements 32 which make up a processing element array 30. These processing elements 32 operate as a single instruction, multiple data (SIMD) processing array. A SIMD processing array is a computing device in which the same processing instruction is supplied to multiple individual processors, but each processor operates on a different data stream. The SIMD processing element array 30 receives its instruction from the processing element array control unit 40 and data from the linear expression evaluator 36. The processing element array element control unit 40 is primarily responsible for sequencing instructions and addresses to the processing element array 30. The operations are programmable and determined by a set of micro-instructions held locally in random access memory ("RAM") and read only memory ("ROM") (col. 7, lines 22-58). The image generation system 20 also communicates with a video memory 24 which may function as a frame buffer where image frames are constructed (col. 8, lines 15-17). The operation of the

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image generation system 20 after receiving instructions from the host processor 22 is illustrated in Figs. 3, 4, and 5, wherein the image generation system carries out four functions to convert the model in the database to an image in the frame buffer (col. 9, lines 4-7) (translating SIMD instructions to API graphics commands). As shown in Fig. 5, Rich teaches once each processing element 32 has been assigned a contribution as seen in block 63 (Fig. 4), texture u, v values are then generated by the processing elements 32 and perspective corrected if required as shown in block 71. These u, v values are also converted to MAP addresses as reflected in block 71.

Texture texels are then looked up by reading the texture maps from memory through the video memory interface 44 or PCI Interface 42 and distributing the texture maps to the appropriate processing elements 32 through the central control unit 38 (col. 10, lines 18-31). Thus, it is implied that texels have been read into and assigned with addresses in texture maps so that the processing elements 32 can read and retrieve therefrom. Details of the processing element array 30 (PEA) is described with reference to Fig. 6, which comprises a transfer path through the bus link 224 is used to download texture maps to the video memory 24 (frame buffer) from the host processor 22, transfer texture data from video memory 24 to the data bus controller DBC 222, write the pixel data generated by the PEA 30 to the video frame buffer memory 24 or download micro-code from external memory to the micro-code cache uCC 202 (col. 13, lines 56-62). The process of storing, retrieving, performing instructions on texels based on their addresses is illustrated in Fig. 10.

In regard to claims 5-7, 15-17, as shown in Fig. 10, Rich teaches it is best to accumulate as many texel block addresses as possible before proceeding further. If, in block 116, panel memory is found to be not full, then control is passed back to block 113 for further polygon

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distribution. When panel memory is found by block 116 to be full, processing advances to block 117 (col., lines). thus, it is implied that the panel memory (a second texture memory) stores addresses of texels. Step 119 (Fig. 10-1) depicts the retrieval of stored addresses.

In regard to claims 8 and 18, as cited above, The SIMD processing element array 30 receives its instruction from the processing element array control unit 40 and data from the linear expression evaluator 36, thus it is implied that during processing SIMD instructions are stored with frame buffer pixels in each stage of processing.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rich (U.S. Patent No. 5,923,338) in view of Krech, Jr. (U.S. Patent No. (6,057,852).

Referring to claims 10 and 20, as applied to claims 9 and 19 above, Rich teaches all the limitations of claims 10 and 20, except for the graphics API is OpenGL with texture extension.

However, as cited by Krech, OpenGL is a widely used graphics API, which is rapidly becoming an industry standard since it does not require such a color command to be associated with the drawing instruction/command (col. 2, lines 60-63).

Therefore, it would have been obvious to one skilled in the art to utilize OpenGL API as described by Krech in combination with the method for perform SIMD instructions as taught by Rich because OpenGL offers a robust, yet flexible, programming interface (col. 2, lines 64-66).

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Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau H. Nguyen whose telephone number is: 703-305-4104. The examiner can normally be reached on MON-FRI from 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 703-308-6829.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D. C. 20231

or faxed to:

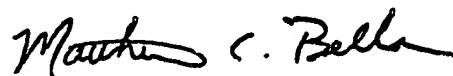
(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

H. Nguyen

08/21/2003



MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600